

Claim Amendments

Please cancel claims 42-48, amend claims 1, 3-25, 27-41 and add new claims 49-56 as follows:

1. (currently amended) A method, comprising:

obtaining, for each of a plurality of consecutive time intervals, one or more parameters from an audio signal, said one or more parameters relating to audio characteristics of the audio signal,

~~segmenting [[an]] the audio signal into a plurality of segments based on audio characteristics of the audio signal, the audio characteristics indicative of parameters in a parametric representation of the audio signal~~ the parameters obtained for the consecutive time intervals; and

encoding the segments with different encoding settings.

2. (canceled)

3. (currently amended) ~~[[The]]~~ A method ~~[[of]]~~ according to claim 1, wherein the characteristics include voicing characteristics in said segments of the audio signal.

4. (currently amended) ~~[[The]]~~ A method ~~[[of]]~~ according to claim 1, wherein the characteristics include energy characteristics in said segments of the audio signal.

5. (currently amended) ~~[[The]]~~ A method ~~[[of]]~~ according to claim 1, wherein the characteristics include pitch characteristics in said segments of the audio signal.

6. (currently amended) ~~[[The]]~~ A method ~~[[of]]~~ according to claim 1, wherein said segmenting is carried out concurrent to said encoding.

7. (currently amended) ~~[[The]]~~ A method ~~[[of]]~~ according to claim 1, wherein said segmenting is carried out before said encoding.

8. (currently amended) ~~[[The]]~~ A method ~~[[of]]~~ according to claim 1, wherein a plurality of voicing values are assigned to the audio characteristics of the audio signal in said segments, and wherein said segmenting is carried out based on the assigned voicing values.

9. (currently amended) ~~[[The]]~~ A method ~~[[of]]~~ according to claim 8, wherein the plurality of values includes a value designated to a voiced speech signal and another value designated to an unvoiced signal.

10. (currently amended) ~~[[The]]~~ A method ~~[[of]]~~ according to claim 8, wherein the plurality of values further includes a value designated to a transitional stage between the voice and unvoiced signal.

11. (currently amended) ~~[[The]]~~ A method ~~[[of]]~~ according to claim 8, wherein the plurality of values further includes a value designated to an inactive period in the audio signal.

12. (currently amended) ~~[[The]]~~ A method ~~[[of]]~~ according to claim 1, ~~further comprising wherein said encoding comprises selecting a quantization mode for said encoding in order to improve the improving bit allocation and to reduce the for reducing parameter update rate,~~ wherein the segmenting is carried out based on the selected quantization mode.

13. (currently amended) ~~[[The]]~~ A method ~~[[of]]~~ according to claim 1, wherein said segmenting is carried out based on a selected target accuracy in reconstructing of the audio signal, wherein the target accuracy is selected based on a distortion criteria comparing upsampled quantized values and modified parameter signal.

14. (currently amended) ~~[[The]]~~ A method ~~[[of]]~~ according to claim 5, wherein said segmenting comprises ~~is carried out for~~ providing a linear pitch representation in at least some of said segments.

15. (currently amended) ~~[[The]]~~ A method ~~[[of]]~~ according to claim 1, wherein the audio signal is encoded into audio signal data, said method further comprising:

forming a parameter signal based on the audio signal data having a first number of signal data;

downsampling the parameter signal to a second number of signal data for providing a further parameter signal, wherein the second number is smaller than the first number; and

upsampling the further parameter signal to a third number of signal data in decoding, wherein the third number is greater than the second number.

16. (currently amended) [[The]] A method [[of]] according to claim 15, wherein the third number is equal to the first number.

17. (currently amended) [[The]] A method [[of]] according to claim 15, wherein the signal data ~~comprise~~ comprises quantized parameters.

18. (currently amended) [[The]] A method [[of]] according to claim 15, wherein the signal data comprises unquantized parameters.

19. (currently amended) A decoder, comprising:

an input for receiving audio data indicative of a plurality of segments of an audio signal, wherein one or more parameters are extracted from the audio signal for each of a plurality of consecutive time intervals, the parameters relating to audio characteristics of the audio signal, and wherein the plurality of segments are obtained based on the parameters extracted for the consecutive time intervals, and the audio data is indicative of a plurality of the parameters in an adjusted representation, wherein the audio data comprises a plurality of segments indicative of an input audio signal having audio characteristics and wherein the segments are obtained based on the audio characteristics and encoded with a plurality of encoding settings based on the audio characteristics; and

a module, responsive to the audio data, for generating a further audio signal based on the adjusted representation and the encoding settings.

20. (currently amended) ~~[[The]]~~ A decoder ~~[[of]]~~ according to claim 19, wherein the audio data is recorded on an electronic medium, and wherein input of the decoder is operatively connected to the electronic medium for receiving the audio data.

21. (currently amended) ~~[[The]]~~ A decoder ~~[[of]]~~ according to claim 19, wherein the audio data is transmitted through a communication channel, and wherein the input of the decoder is operatively connected to the communication channel for receiving the audio data.

22. (currently amended) An encoding device comprising:

an input for receiving audio data indicative of parameters obtained from an audio signal in a plurality of consecutive time intervals, the parameters relating to ~~indicative of~~ audio characteristics of the audio signal; and

an adjustment module for adjusting one or more of the parameters based on the audio characteristics ~~for providing an adjusted representation of the parameters, wherein said adjusting comprises segmenting the audio signal into a plurality of segments based on the parameters obtained for the consecutive time intervals~~ characteristics of the audio signals and encoding the segments based on one or more of a plurality of encoding settings.

23. (currently amended) ~~[[The]]~~ An encoding device ~~[[of]]~~ according to claim 22, further comprising a quantization module, responsive to the adjusted representation, for coding the parameters in the adjusted representation.

24. (currently amended) ~~[[The]]~~ An encoding device ~~[[of]]~~ according to claim 22, further comprising an output end, operatively connected to a storage medium, for providing data indicative of the coded parameters in the adjusted representation to the storage medium for storage.

25. (currently amended) ~~[[The]]~~ An encoding device ~~[[of]]~~ according to claim 22, further comprising an output end, operatively connected to a communication channel, for providing signals indicative of the coded parameters in the adjusted representation to the communication channel for transmission.

26. (previously presented) A computer readable storage medium embedded with a computer program comprising programming code for carrying out the method of claim 1.

27. (currently amended) An electronic device comprising:

an input module for receiving audio data indicative of a plurality of segments of an audio signal, wherein one or more parameters are extracted from the audio signal for each of a plurality of consecutive time intervals, the parameters relating to audio characteristics of the audio signal, and wherein the plurality of segments are obtained based on the parameters extracted for the consecutive time intervals, and the audio data is indicative of the parameters in an adjusted representation, wherein the audio data comprises a plurality of segments indicative of an input audio signal having audio characteristics and wherein the segments are obtained based on the audio characteristics and encoded with a plurality of encoding settings based on the audio characteristics; and

a decoder, responsive to the audio data, for generating a synthesized audio signal based on the adjusted representation.

28. (currently amended) [[The]] An electronic device [[of]] according to claim 27, wherein the audio data is recorded in an electronic medium, and wherein the input is operatively connected to the electronic medium for receiving the audio data.

29. (currently amended) [[The]] An electronic device [[of]] according to claim 27, wherein the audio data is conveyed through a communication channel, and wherein the input is operatively connected to the communication channel for receiving the audio data.

30. (currently amended) [[The]] An electronic device [[of]] according to claim 27, comprises a mobile terminal.

31. (currently amended) A communication network, comprising:

a plurality of base stations; and

a plurality of mobile stations adapted for communicating with the base stations, wherein at least one of the mobile stations comprises:

~~an input module for receiving audio data indicative of a plurality of parameters in an adjusted representation from at least one of the base stations, wherein the audio data comprises a plurality of segments indicative of a plurality of segments of an input audio signal, wherein one or more parameters are extracted from the audio signal for each of a plurality of consecutive time intervals, the parameters relating to having audio characteristics of the audio signal, and wherein the plurality of segments are obtained based on the audio characteristics parameters extracted for the consecutive time intervals and encoded with a plurality of encoding settings based on the audio characteristics, the audio data indicative of the parameters in an adjusted representation; and~~

a decoder, responsive to the audio data, for generating a synthesized audio signal based on the adjusted representation.

32. (currently amended) A decoder according to claim 19, ~~comprising:~~

~~an input for receiving audio data indicative of end points defining a plurality of sub-segments, wherein the audio signal is indicative of a plurality of parameters, the parameters including pitch contour data containing a plurality of pitch values representative of an audio segment in time, and wherein the pitch contour data in the audio segment in time is approximated by a plurality of consecutive sub-segments in the audio segment for providing a plurality of end points, and wherein the end points include a first end point and a second end point for defining each of said sub-segments; and~~

a reconstruction module for reconstructing the audio segment based on the received audio data.

33. (currently amended) ~~[[The]]~~ A method ~~[[of]]~~ according to claim 1, wherein the encoding settings ~~include~~ comprise bit allocation, quantization accuracy, quantization method and parameter update rate.

34. (currently amended) [[The]] A method [[of]] according to claim 1, wherein the audio signal contains sinusoidal components and said parameters include frequency values, amplitude values and phase values indicative of the sinusoidal components.

35. (currently amended) [[The]] A method [[of]] according to claim 1, wherein the parameters include pitch, voicing, amplitude and energy of the audio signal.

36. (currently amended) [[The]] A method [[of]] according to claim 1, wherein the parameters include pitch contour data containing a plurality of pitch values representative of an audio segment in time.

37. (currently amended) [[The]] A decoder [[of]] according to claim 19, wherein the encoding settings include bit allocation, quantization accuracy, quantization method and parameter update rate.

38. (currently amended) [[The]] An encoding device [[of]] according to claim 22, wherein the encoding settings include bit allocation, quantization accuracy, quantization method and parameter update rate.

39. (currently amended) [[The]] A computer readable storage medium ~~embedded with a computer program of~~ according to claim 26, wherein the encoding settings include bit allocation, quantization accuracy, quantization method and parameter update rate.

40. (currently amended) [[The]] A communication network [[of]] according to claim 31, wherein the encoding settings include bit allocation, quantization accuracy, quantization method and parameter update rate.

41. (currently amended) [[The]] A method [[of]] according to claim 1, wherein the audio signal comprises a plurality of frames and the audio signal in each frame has a waveform and wherein a further audio signal is produced in the decoding stage independently of the waveform.

Claims 42-48. (canceled)

49. (new) A method according to claim 1, wherein the parameters are obtained from the audio signals in regular time intervals.

50. (new) A method according to claim 1, wherein said segmenting is based on the similarity in the parameters among consecutive time intervals.

51. (new) A decoder according to claim 19, wherein the parameters are extracted from the audio signals in regular time intervals.

52. (new) A decoder according to claim 19, wherein the plurality of segments are obtained based on similarity in the parameters among consecutive time intervals.

53. (new) An encoding device according to claim 22, wherein the parameters are obtained from the audio signals in regular time intervals.

54. (new) An encoding device according to claim 22, wherein said segmenting is based on similarity in the parameters among consecutive time intervals.

55. (new) An electronic device according to claim 27, wherein the plurality of segments are obtained based on similarity in the parameters among consecutive time intervals.

56. (new) A communication network according to claim 31, wherein said segmenting is based on similarity in the parameters among consecutive time intervals.